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Technology Levels Seasonal Farm Work

FARM production, at today's high level, takes only two-thirds as much human labor as would have been required in 1920 for a like volume of production. With 1920 methods, tools, crop varieties, and livestock practices, farmers would have to put in about 30 billion hours of work for this year's farm production. But, owing to the advances made in technology, the job takes only about 21 billion hours.

Actually though, farmers are now producing about a third more and are doing it in about 10 percent less time than in World War I, and the work is more evenly distributed through the year. More machines, higher yields per acre of land and per head of livestock, and better farming practices are principally responsible for this gain.

True, some areas have more machine power than others, and crop and livestock yields have increased more in some. Also labor requirements differ from area to area, according to the degree of mechanization and to the type of crop and livestock production. But greater mechanization and increased yields is the trend in all areas.

Representative of a great many commercial farms is what has happened to the labor requirements and their sea-

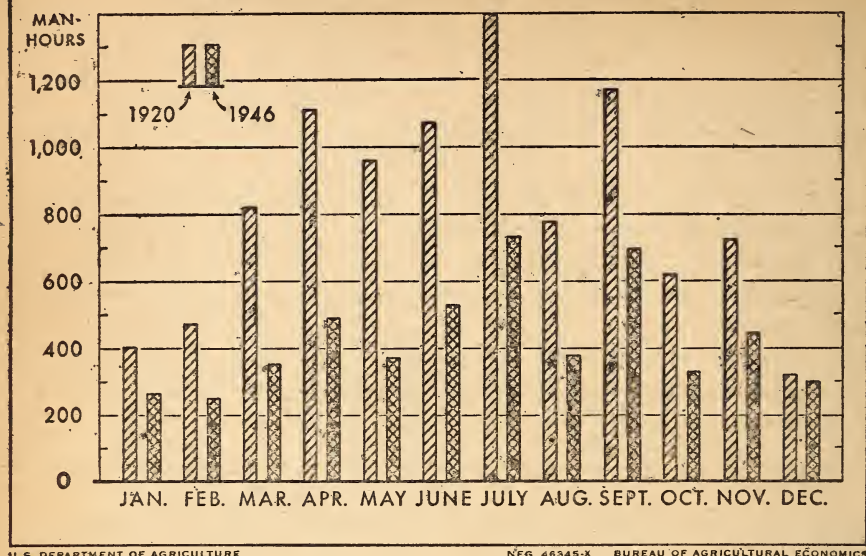
sonal distribution on a family-sized Iowa farm, as shown in the accompanying chart. In 1920 this farm had about 230 acres in crops—half was in corn and the balance in small grains and hay. At that time it had 14 horses, 16 hogs, 6 milk cows, and 52 beef cattle (half being breeding herd).

For 1946 it was assumed that the same acres of each crop were grown as in 1920. No soybeans were raised on this farm in 1920 and thus none in 1946 though they were on a great many Iowa farms in the latter year. Crop yields on this farm in 1946 were a great deal higher than in 1920, and livestock numbers were increased in accordance with the greater feed supply—that is, all but the horses. There were only 2 of them in 1946. Machines had replaced the other 12. The feed thus saved was used to feed several more cattle in 1946. The increased use of tractors, trucks, corn pickers, and other machines on this farm was about the same as the average for all Iowa farms.

Despite the increased production in 1946, about half as many hours of labor were needed on this farm for crops and livestock as in 1920. During the peak seasons it took about 3 workers to do the job in 1946; it took 6 in 1920.

HOW MACHINES CUT FARM WORK

TOTAL MAN-HOURS ON IOWA FARM, 1920 AND 1946



This farm, typical of many throughout the country, has two peak labor seasons. The first in spring and early summer is one of preparing the land, planting, and cultivating, as well as the harvesting of small grains and first hay crop. The second, after the August lull, is one of corn picking, ensilage cutting, and winter wheat seeding. Though the labor needed was reduced from 1920 to 1946, during each month the biggest cut was in the spring and early summer peak season. A much smaller cut came during the fall harvest season and very little during the winter months. Thus the fall harvest period was more of a rush season. There are several reasons for this.

Corn yields were higher in 1946 and it takes more time in the fall to pick 60 rather than 45 bushels per acre and to

put up 11 rather than 9 tons of ensilage per acre. Modern power machines are more widely used on preharvest jobs for corn and save more spring work than fall harvest labor. Most ensilage is put up about the same as it was 25 years ago and lots of corn is still picked by hand. Small-grain combines, while not used much on this farm, saved some early summer work, but use of tractors for preparing and seeding fall grains saved relatively less time.

The additional livestock in 1946 over 1920 helped spread the labor more evenly through the year and was the primary reason for the small drop in winter work. Because livestock chores have to be done every day, the more important livestock is on a farm the less pronounced are the peaks of the busy seasons and the valleys of slack periods.

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Editor: J. G. Kiddle

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However, for the country as a whole the reduction in labor needs has not been as much as on this Iowa farm. There has been a change in kinds of crops grown. Fruits, vegetables and similar crops have come in more and they take more work than the crops going out.

On many farms the shift to a bigger fall harvest labor load is even greater than on this Iowa farm. This is especially true in the cotton and tobacco belts. Cotton yields have increased more than twice as much as corn in the past 25 years. Though there has been some advance in mechanizing preharvest work on cotton, picking is still largely hand work and the time required increases almost in proportion to the yield.

Cotton takes about a fifth of the work on all crops in the country and so the more time required to pick bigger yields is a potent force in pushing the big farm labor load from the spring to fall months. Tobacco, another crop requiring large amounts of hand labor to harvest, has also aided this shift to late summer and fall as yields have increased.

For wheat, oats, and other small grain the combine cuts more time from older harvest methods than does the tractor in preharvest work. And where the combine is used almost exclusively and especially in winter grain areas the

midsummer labor load is reduced more than during the fall season.

While the advances in machine power and higher yields thus far have made the fall harvest period more of a rush season, further progress in the years ahead may cut fall harvest labor requirements. This will come as even better corn pickers, sugar-beet harvesters, cotton pickers, and similar row-crop harvesting machines are used more widely.

The generally larger livestock numbers of recent years are equally important in flattening seasonal labor requirements as well as providing more year-round work, particularly during the winter months. As the Nation turns more and more to conservation farming and grassland agriculture, more livestock will be raised. This in turn will mean that farming will become more of a year-round job, with a leveling out of the back-breaking rush of the seasonal peaks and slack days of the seasonal valleys.

But that is the future. Today, even though machines have cut farm labor needs during each month most farmers still have labor peaks as they did a quarter of a century ago. But the spring peak is greatly reduced, the fall peak less so, and there is almost as much to do in the wintertime. Farming is more of a year-round job.

REUBEN W. HECHT

Bureau of Agricultural Economics

Farm Clothing Bill Double Prewar

FARMERS last year on the average spent about \$270 on clothing for themselves and their families. This is twice the \$135 spent in 1941. Adding all farmers' clothing expenses together makes a total bill of about 1.6 billion dollars. Farmers spent nearly 1 out of every 10 dollars for clothing in the United States.

Clothing expenses loom large in farm living costs—amounting to some 17 percent of the total. Of the clothes farmers buy the prices paid were a good deal more than twice what they were before the war. This is particularly true of work shirts, overalls, and men's wool trousers, as well as women's house dresses and some rayon items.

The 1946 index of prices paid by farmers for clothing was 249; for the

1935-39 period it was 126. But in March of this year the index had climbed to 285. This suggests that farmers will spend more for clothing in 1947 than in 1946.

In addition to paying higher prices for their clothing, farmers, like city people, often have had to buy goods whose quality or design had suffered as a result of wartime shortages and restrictions. Since the end of the war, pre-war quality clothing has begun to reappear. In addition many clothing manufacturers, with an eye on future farm sales, will make wider use of newer fabrics, better manufacturing processes, and improved designs to meet farm clothing needs.

ROBERT E. BRANSON

Bureau of Agricultural Economics

Marketing Research in BAE

FARMERS are producing abundantly—one-third more than before the war—and they want to continue abundant production.

For this reason, more and more of them are pinning their hopes on improved markets rather than restricted production. They believe this is the cure for the "surpluses" that may develop when the current world-wide demand for food abates. The Department of Agriculture, State Colleges, Experiment Stations, and other agencies—both private and public—are now getting ready to put greater emphasis on marketing research.

Marketing Margins

Since 1935 the Bureau of Agricultural Economics has published monthly reports showing price spreads between farmers and consumers for food products. In addition, it has issued special reports from time to time on nonfood products such as cotton, wool, and tobacco. Farmers are interested to know that though marketing margins change very little, they get a larger share of the consumer's dollar spent for farm products during periods of high prices, and a smaller share when prices are low or falling.

Since the beginning of the war the Bureau has put out figures on a national "market basket." These figures show what it costs consumers for fixed amounts and types of food that make up the market basket. The figures also show what the farm value is of the products that go into the market basket, and the resulting price spread from farmer to consumer. The data indicate that on the average farmers get 50 cents out of each dollar spent for food at retail. Similar estimates indicate 10 cents out of each dollar spent for cotton and wool clothing and tobacco products at retail.

Studies on the benefits of prepackaging and refrigerating of fresh produce were started several years ago. Up to that time very little research had been done in this field, and practically no produce was retailed in prepacked form. Since then a growing proportion of fresh produce is being prepack-

aged for retail sale, and frozen foods are now commonplace.

These studies included experiments in consumer acceptance, savings in labor and other costs, and reductions in waste and spoilage—all compared to produce marketed in the bulk. The findings definitely indicated that for a great many commodities this new step in marketing offered many benefits to consumers and producers as well as to the trade.

At present most of the preparation and prepackaging is done at metropolitan distribution points, but it is believed there would be even further savings by preparing the produce on or near the farm for prepackaging later. This would mean the cleaning and trimming of the harvested produce in order to keep all inedible and unmarketable material to a minimum. Such a further step would cut down a great deal on shipping and handling costs as well as reduce waste and spoilage. The prepackaging would continue to be done at urban distribution points, but in some instances it might be better to do it close to the farm.

Transportation Research

Research on transportation problems of farm products has been used in many ways. Early in the war a study was made of livestock trucking problems in the Midwest. The recommendations in the report were adopted widely to get greater truck efficiency and conserve scarce equipment.

A recent study dealt with better loading methods in rail and truck hauling of fresh fruits and vegetables. The recommendations have been discussed widely in the trade and generally adopted by some railroads. The fruit and vegetable trade, using improved loading methods, is petitioning for lower rates on heavily loaded cars.

Another study now being made deals with transportation charges and market outlets for citrus. These studies are typical of those the Bureau has been making for several years in the field of transportation of farm products.

Many detailed studies have been made of the marketing system and factors affecting market outlets of indi-

vidual farm products. Cotton, tobacco, wool, livestock, citrus fruits, and dried milk are some of the commodities studied so far. These studies show what happens to the products in the various marketing stages, what costs are added at each step, how marketing costs affect returns to producers, and how prices of competing commodities affect market outlets and returns to producers. Nowhere else is such complete information available.

For example, a study of cotton shows the effect on changes in prices of American cotton in relation to prices of competing foreign growths. Other studies point out how the programs dealing with the cotton stamp, cotton mattress, cotton insulation, cotton bagging, and others influence prices and incomes to producers, as well as costs to consumers and the Government. These investigations also show the influence of export subsidies on the incomes from domestic cotton to producers.

Another report released recently, points out the need for getting new outlets and uses for the steadily increasing citrus output.

A recent study shows how dried milk production expanded in recent years to meet wartime needs. A quarter of a million farmers shifted from selling farm-separated cream to selling whole milk. The study points out possibilities for decreases in marketing costs and expanding peacetime market outlets. This will enable consumers to enjoy better diets through the greater use of dried milk, and at the same time enable farmers to continue the profitable practice of marketing more of their production as whole milk.

Several studies have been made of the commodity markets, particularly trading in futures. Cotton, corn, wheat, and oats have been studied so far.

What Consumers Prefer

Consumer preference studies are becoming more important. The Bureau is just finishing the analysis of a national interview survey to find out women's preferences for specific items of clothing and household goods made of cotton, wool, rayon, nylon, and other materials. Some of the things the survey is expected to show is the extent

to which women are influenced by the price, durability, appearance, ease of laundering, etc., of the various textiles. It is planned to extend the inquiry to a wider range of textile products. The results of such research will provide cotton growers, manufacturers, and merchants with information which will enable them to better meet the competition from other fibers, particularly rayon, nylon, and other synthetics. Similar surveys have been suggested for potatoes, fruits, and vegetables, and other farm products.

Regional Marketing Problems

The Bureau has a long record of co-operation with other agencies in studying regional marketing problems.

The New England Research Council on Agriculture and Food Supply has been in existence for nearly 25 years. Its object is to tie together the research on a wide range of economic problems in New England. BAE is one of the co-operating agencies on the Council and its Executive Secretary is also a member of the Bureau's staff. The Council has sponsored some outstanding work in marketing, particularly in the field of milk marketing.

Regional research in livestock marketing was started by the North Central Livestock Marketing Research Committee in 1940. At the request of the 14 cooperating experiment stations, a staff member of the Bureau has worked with the committee in developing plans for the various projects, in coordinating the work among the States, and in preparing the reports.

For several years the Bureau has participated in the study of marketing problems of agriculture on the Pacific coast and in the Northwest. Illustrative of this work is the study on processing industries for agricultural products in the Columbia River Basin. The study points out how efficient marketing and processing industries can be set up for the major agricultural products expected to be produced in the newly irrigated area. The area is described as "equivalent to a new State in land settlement opportunities and eventual agricultural production." It points out that the Columbia Basin affords an unusual opportunity to plan the mar-

keting and processing facilities for a large agricultural area.

The marketing research briefly mentioned here illustrates some of the work done by only one division of the Bureau, and the comments deal largely with the research carried on during the past few years. Much of the economic

and statistical research done elsewhere in the Bureau has always had a direct bearing on marketing. This is particularly true of the work on general prices and income, commodity outlook studies, and crop and price reporting.

BENNETT S. WHITE, Jr.
Bureau of Agricultural Economics

Soybean Facts

THE 1946 soybean crop of 197 million bushels set a new record. This spring, bad weather cut the acreage planted to oats, and in mid-May it looked like farmers would increase their soybean acreage above 1946. So, if weather is average or better, production for 1947 could again be close to 200 million bushels.

In 1924, first year of official estimates, 5 million bushels of soybeans were raised. Today's crops are about 40 times larger. No other farm commodity has had such a spectacular production jump.

Back in the 1920's and early 1930's, China was the leading soybean producer, with an annual out-turn of about 200 million bushels. Manchuria was second in production and first in exports, with a yearly output of 150 million bushels.

U. S. Production Well Started

By the mid-1930's, the United States had become an important soybean producer, with over four-fifths of the output coming from Illinois, Indiana, Ohio, Iowa, and Missouri. The crop is still most important there, but soybeans are gaining footholds in other areas. The severe drought in 1934 led subsequently to a big boost in soybean production. In 1935 farmers more than doubled their 1934 output because soybeans stood up better against drought than corn and most other grains.

Before 1935 the largest single use of soybean oil was in paints and varnishes. Little was used for food purposes. But the lard shortages from 1935 through 1937 brought big demands for vegetable oils and for improvement in the quality of soybean oil for food uses. Soon large amounts of soybean oil were used in shortening and cooking oil, and a good deal in margarine. By the late

1930's, the use of soybean oil in paints and other nonfood products accounted for only a small share of all the oil produced, though the total amount so used was larger than before.

Since 1939 the bulk of the soybean oil produced has gone into foods. Today soybean oil is the most important ingredient in shortening and is second only to cottonseed oil as a material for margarine.

One problem remaining to be licked is flavor instability or "reversion." Research is in progress to solve this problem. Soybean oil recently has become important in making synthetic resins. Its use as a paint and varnish oil may soon get a big boost if current experiments in separating the oil into fast-drying and slow-drying fractions work out successfully. The slow-drying fraction would be an improved food oil.

Better varieties of seed have been developed to help meet the growing demand for soybeans. Like hybrid corn, soybeans do best when adapted to local growing conditions. This was what plant breeders went after in developing varieties that yielded more bushels per acre and more oil per bushel. They also had to make these new varieties more suitable for machine harvesting than older ones, many which came from the Orient. The breeders have done their job producing many varieties that meet these tests and others. So, today there are many varieties of soybeans adapted commercially to a wide range of soil and weather conditions in this country. But in the years ahead still better varieties will be developed.

Farmers were reasonably well prepared to expand their soybean production when war cut off this country's big imports of fats and oils, particularly from the Orient and South Pacific. Even in 1941 war conditions in other parts of the world brought an increase

in home production. And in 1942, after Pearl Harbor, output jumped over 80 million bushels to 188 million, about double the 1935-39 average. Since then production has been between 190 million and 200 million bushels each year.

Oil Output Skyrocketed

The amount of oil crushed from soybeans has grown by leaps and bounds. The 1946-47 output of close to 1½ billion pounds of crude soybean oil is the largest single source of vegetable oil in the United States, and second only in fat production to lard and butter.

The wartime role of soybean meal was no less colorful than that of soybean oil. Soybean meal production jumped from a million to over 3 million tons during the war. In the current feeding year nearly 4 million tons will be produced. The large supplies of high-protein soybean meal produced during the war contributed directly to the milk and egg production records, and to the large quantities of pork and beef produced.

For the next 4 or 5 years the outlook for soybeans is fairly bright. It will take that long for the world to return to prewar consumption patterns. Europe is particularly short of fats and oils and will need soybean oil (and meal to build back its livestock business). Some will come from this country. World population will be at least 10 percent larger than before the war. If there is reasonable prosper-

ity here and abroad, demand for fats and oils should be stronger than before the war.

But sooner or later supplies of fats, oils, and protein meals will catch up with demand. Farmers can expect a drop from present high soybean prices, though not down to where they were just before the war. Use of soybean products has been greatly increased and consumption of fats and oils in some leading exporting countries is much above prewar. Nevertheless several years from now the world supply of fats and oils, and oil-bearing materials, may become excessive. This would be particularly true if there is another big expansion in palm-tree plantations as after World War I, if the present plan for large-scale production of peanuts for oil in Africa works out, and if output of other tropical oils, particularly coconut, increases further.

Even so, large-scale soybean production in the United States seems here to stay. The soybean is one of the most versatile of farm products. It provides valuable foods, much needed livestock feed, and is important for many industrial uses. A great many farmers are geared to soybean production. There is now a large soybean crushing capacity. And marketing channels are well developed. All these things point to soybeans as an important cash crop in the United States for years to come.

ROBERT M. WALSH

Bureau of Agricultural Economics

More Mustard for Food—and Oil

THE proverbially tiny mustard seed has put millions of dollars in the pockets of many farmers in recent years. The demand for mustard seed went up greatly during the war.

A lot more prepared mustard is used on foods than before the war. But the big boost in the demand has come from industrial users of mustard oil. This oil is used in making soap, textiles, lubricants for precision machinery, and many other things.

Farmers last year produced about 43 million pounds of mustard seed and got about 3½ million dollars for the crop. Before the war the average crop was just a fraction of this, with the farm value usually less than half a million dollars.

Farmers in Montana produce the lion's share of the mustard seed harvested in this country. They produced nearly 90 percent of the 1946 crop. California is another important producer, and in the last few years the crop has been raised in Washington, Oregon, North Dakota, and Nebraska.

For the near future, mustard seed production looks like a good thing. As long as people continue to eat a lot of meat and other foods and as long as there is a big industrial need for fats and oils, mustard seed should continue in good demand for several years more.

T. J. KUZELKA

Bureau of Agricultural Economics

Economic Trends Affecting Agriculture

Year and month	Industrial production (1935-39 = 100) ¹	Income of industrial workers (1935-39 = 100) ²	1910-14=100				Index of prices received by farmers (August 1909-July 1914=100)			
			Wholesale prices of all commodities ³	Prices paid by farmers		Farm wage rates ⁴	Livestock and products			
				Commodities	Commodities, interest, and taxes		Dairy products	Poultry and eggs	Meat animals	All livestock
1910-14 average.....	58	50	100	100	100	100	100	101	101	101
1915-19 average.....	72	90	158	151	150	148	148	154	163	153
1920-24 average.....	75	122	160	161	173	178	159	163	123	142
1925-29 average.....	68	129	143	155	168	179	160	155	148	154
1930-34 average.....	74	78	107	122	135	115	105	94	85	93
1935-39 average.....	100	100	118	125	128	118	119	109	119	117
1940-44 average.....	192	234	139	150	148	212	162	146	171	164
1945 average.....	203	290	154	180	174	350	197	196	210	203
1946 average.....	170	270	177	203	194	378	242	198	256	240
1946										
May.....	159	252	162	192	185	-----	198	173	226	207
June.....	171	269	165	196	188	-----	207	178	230	213
July.....	172	273	182	209	199	378	245	196	268	247
August.....	177	290	188	214	204	-----	257	199	294	263
September.....	180	292	181	210	200	-----	271	221	249	250
October.....	181	293	196	218	207	378	300	257	318	299
November.....	182	298	204	224	212	-----	307	230	313	294
December.....	181	305	206	225	213	-----	312	226	311	294
1947										
January.....	188	306	207	227	215	399	292	201	306	281
February.....	189	307	211	234	221	-----	270	192	319	278
March.....	189	312	218	240	227	-----	269	199	345	292
April.....	-----	-----	216 ⁵	243	236	397	257	204	331	282
May.....	-----	-----	-----	242	229	-----	241	203	327	275

Year and month	Index of prices received by farmers (August 1909-July 1914=100)								Parity ratio	
	Crops.							All crops and live-stock		
	Food grains	Feed grains and hay	To-bacco	Cotton	Oil-bearing crops	Fruit	Truck crops			All crops
1910-14 average.....	100	101	102	96	98	99	-----	99	100	100
1915-19 average.....	193	164	187	163	187	125	-----	163	162	106
1920-24 average.....	147	126	192	189	149	148	143	160	151	86
1925-29 average.....	140	119	172	145	129	141	140	143	149	99
1930-34 average.....	70	76	119	74	72	94	106	86	90	69
1935-39 average.....	94	95	175	83	106	83	102	97	107	84
1940-44 average.....	123	119	245	131	159	133	172	143	154	103
1945 average.....	172	161	366	171	215	220	224	201	202	116
1946 average.....	201	195	382	228	244	226	204	226	233	120
1946										
May.....	198	188	369	194	214	248	177	215	211	114
June.....	200	195	370	210	219	261	185	223	218	116
July.....	215	244	369	249	242	249	163	240	244	123
August.....	203	225	388	271	242	203	162	233	249	122
September.....	207	221	396	285	236	210	154	236	243	122
October.....	218	222	410	304	255	208	151	244	273	132
November.....	220	187	399	236	342	186	207	230	263	124
December.....	224	186	406	242	334	211	166	232	264	124
1947										
January.....	223	184	399	240	336	196	238	236	260	121
February.....	235	185	390	246	334	203	275	245	262	119
March.....	283	212	390	257	360	215	299	266	280	123
April.....	277	223	387	260	358	223	295	269	276	120
May.....	276	218	300	270	326	222	286	268	272	119

¹ Federal Reserve Board; represents output of mining and manufacturing; monthly data adjusted for seasonal variation.

² Computed from data furnished by Bureau of Labor Statistics and Interstate Commerce Commission on pay rolls in mining, manufacturing, and transportation; monthly data adjusted for seasonal variation. Revised April 1947.

³ Bureau of Labor Statistics.

⁴ Monthly data adjusted for seasonal variation.

⁵ Ratio of prices received to prices paid for commodities, interest, and taxes.

⁶ 1924 only.

Two-Thirds of Small Grains Combined

FARMERS are now harvesting very large crops of most small grains. Over two-thirds of the total output will be combined—a decade ago only a fourth was. The greatly increased use of combines in harvesting has made possible the harvesting of the large crops in recent years with limited labor supplies. Where grain is “straight combined” and the straw left on the ground, only about a fifth as much labor is needed as in harvesting by the binder-thresher method.

Survey by Crop Reporters

A Nation-wide survey by crop reporters in 1945 showed that combines were used to harvest about 80 percent of the wheat, 40 percent of the oats, 65 percent of the barley, 50 percent of the rye, 60 percent of the flaxseed, 35 percent of the buckwheat, and 40 percent of the rice. An earlier survey in 1938 indicated that combines harvested only about half of the wheat and a tenth of the oats.

In Kansas, the leading wheat State, more than 90 percent of the total small grain was combined in 1945. Also, more than 90 percent was combined in California, Washington, and Oregon where combines were used for three or four decades prior to their introduction to other parts of the country.

For the country as a whole a little more than half the 1945 small grain acreage was combined as standing grain and 10 percent from the windrow, the rest being threshed with stationary threshers or cut and fed unthreshed.

Combines were used in California and the Pacific Northwest in the latter part of the nineteenth century but did not spread greatly until after World War I. The first combines were very large horse-drawn machines with wheel traction for operating the thresher-unit. Smaller tractor-drawn combines with mounted motors were introduced in the Mountain and Plains States during World War I.

During the early 1930's the introduction of small combines—6-foot and less cutting width—was responsible for bringing combine harvesting to many farms in the Corn Belt, the Northeast,

the Southeast, and other areas where the acreage of small grains per farm is usually small.

Most of the combines sold in the last decade have had rubber tires and over 80 percent have been small machines. During the past few years self-propelled machines have been introduced. They have been adopted for use on some of the larger small-grain farms and are becoming fairly popular in large scale rice farming areas.

The smaller rubber-tired machines usually are operated at a higher speed than the older machines with steel wheels, thus increasing the amount of grain cut in a given period. Many operators combine locally for their neighbors, but much of the custom work in the Great Plains is done by transient combine operators who start in the first fields that ripen in Texas and Oklahoma and move northward as the season advances.

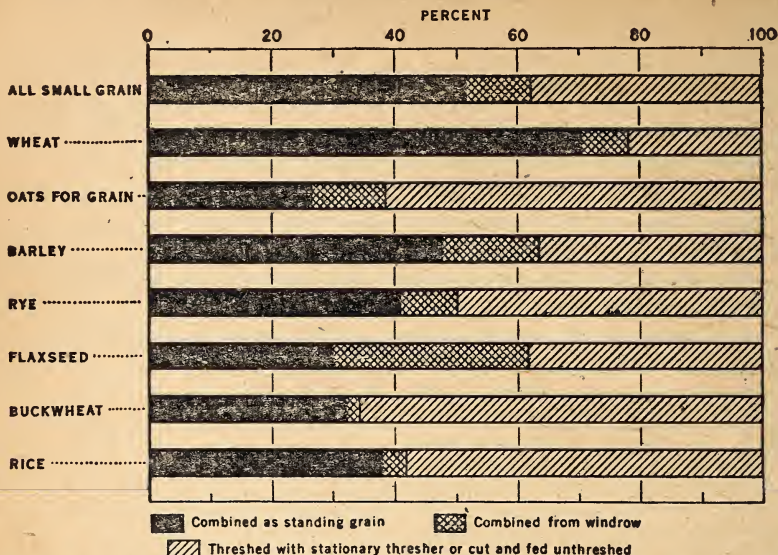
Most of the combines now on farms were bought in the past 10 years. In the late 1920's sales were fairly high, reaching a peak of about 20,000 in 1929, then dropped and remained low for several years—not reaching the 1929 figure again until 1937. Since then farmers have bought about 40,000 combines a year.

Combining From Windrow

Most combining is done from standing grain, but combining from the windrow is important in North Dakota, South Dakota, Iowa, Minnesota, and northern Illinois. Windrowing is most extensively used in the Red River Valley, where more than half the small grain was harvested this way in 1945.

In these areas spring-sown small grains have a shorter growing season and do not mature uniformly. Often the grain is weedy which hinders harvesting if the grain and weeds are cut and run through the combine before the mass of green plant matter is allowed to dry in the windrow. The grain is cut and left in windrows to cure or ripen for a few days, then it is harvested with combines which have attachments that pick up the plants from the windrow.

SMALL GRAINS: ACREAGE HARVESTED BY SPECIFIED METHODS, UNITED STATES, 1945



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Combining from the windrow is most important for flaxseed, barley, and oats. Flaxseed is more subject to weed infestation than other small grains, and ripens unevenly, while several varieties of barley and oats shatter badly if left standing until fully mature. An oats crop that is weedy or is ripening unevenly is often combined from the windrow. Oats are often used as a nurse crop and if windrowed the oats can be cut earlier than if combined as standing grain. This gives the new seeding a better chance for growth.

In localities where there is heavy demand for straw for livestock feed or bedding, and on small farms in hilly areas, the binder-thresher method is still widespread. In 1945 about three-fourths of the small grain acreage in the Lake States and two-thirds in the Appalachian and Northeastern States was threshed with stationary threshers or cut and fed unthreshed. Where grain is combined and the straw collected from the field, little if any labor is saved over the binder-thresher method.

Oats account for the bulk of the small grain cut and fed unthreshed. Feeding of unthreshed oats is most important in the Southeast, but is a fairly common practice in the Northeast, in mountain areas of the West and on farms where the acreage is too small to warrant threshing.

In the humid areas combining rice is a recent development. Sun-checking is reduced when rice is combined, thus increasing the mill outturn of unbroken head rice. When combined from standing stalk, the rice is usually dried with mechanical driers. Drier capacity in 1946 was considerably greater than in 1945, with a corresponding increase in combining of rice.

About 400,000 combines were used in the 1945 harvest, and at least 20 percent more will be used in 1947. With this record number of combines, a greater proportion of small grains will be combined than ever before.

JAMES W. BIRKHEAD
and J. H. PETERS

Bureau of Agricultural Economics

What's Happened in the Futures Market?

AFTER many wartime restrictions in the agricultural futures markets, under the Commodity Exchange Act, most of the commodity exchanges are now getting back to normal. Because of higher prices, the dollar volume of trading in all regulated commodities combined is much larger than before the war, though the number of contracts is considerably smaller.

Futures trading in wheat, corn, lard, cottonseed oil, and mill feeds has increased in recent months, and the volume in cotton, oats, eggs, and potatoes is larger than before the war.

The passing of wartime fixed prices has increased the activity of hedging and risk bearing services of the futures markets. Equally important, the commodity exchanges are again reflecting basic supply and demand forces in central price picture for all to see—at Chicago, New York, Minneapolis, Kansas City, New Orleans, and other important exchange locations.

The experience of American futures markets is in sharp contrast to the situation in Europe, where the great exchanges such as at Liverpool, Le Havre, Rotterdam, and Bremen are still closed. With the acute food shortages on the Continent, and disrupted channels of distribution, European farm products continue to be marketed under rationing, government-fixed prices and black markets. The task of rebuilding normal marketing channels and organizing exchanges will be long and difficult.

Many New Regulation Problems

Wartime and postwar conditions still pose many problems for American futures markets. In the past 2 years the Commodity Exchange Authority of the Department of Agriculture has worked with a much wider range of regulatory problems than before the war. Rising prices have brought many new speculative pressures and nervous price movements.

The hedging services of some exchanges are still impaired, either because of thin markets, or due to the heavy and persistent "inversion" of futures prices—near futures selling at a

premium over distant futures. Over the past year, with the immediate demand for cotton, grain, and some other farm commodities greater than the immediate supply, near futures have sold much higher than distant deliveries. Under these conditions it has been difficult for many merchandisers, processors, and producers to get the same degree of protection against price changes they received before the war. But this condition should correct itself as supplies catch up with demand.

Considering the unprecedented dislocations and disturbances caused by the war, the major futures markets have so far shifted back to peacetime conditions with good success—and in a much more orderly manner than after World War I. At that time abuses of the futures system led to the first Federal regulatory legislation, the Grain Futures Act of 1922, changed to the Commodity Exchange Act in 1936.

Cotton Trading Bigger Than Prewar

The cotton futures exchanges are the largest markets which came through the war without any interruption. The New York Cotton Exchange continues as the largest cotton futures market, though the volume of trading on the New Orleans Cotton Exchange has increased more than it has in New York. The large speculative cotton market in 1946 culminated in the October price collapse. Cotton fell 8 cents a pound in 2 weeks, and the exchanges were forced to close temporarily. CEA investigations laid the groundwork for far-reaching corrective measures.

In earlier years such a price break might have impaired confidence in the markets and depressed prices for a long period. Owing in part to the operations of the Commodity Exchange Act there were no large financial failures in the October cotton price collapse, and the markets soon recovered. Although trading activity in cotton has declined since last fall, the volume continues to be larger than prewar, with a very substantial hedging interest in the market.

Grain Futures Recovering From War

Trading in wheat and corn, the largest grain futures markets, has only re-

Buyers, Sellers Use Crop Reports

Crop reports are very important to the supply picture necessary in all commodity exchanges. They are the "open books" available to all—the buyer, the seller, and the producer. Without them the futures markets in many instances would fluctuate widely. Because crop reports are important barometers of the ever-changing production and supply picture, they are therefore important in keeping the market information up to date. And that helps farmers get fair prices for their products.

cently begun to recover from sharp wartime restrictions. The bulk of trading continues at Chicago, Minneapolis, and Kansas City. Hedging in these markets is still relatively small compared with prewar. Grain dealers and producers have had considerable difficulty in placing hedges, partly because of the heavy demand for the nearby months and the uncertainty about prices in late 1947 and in 1948.

Although the volume of grain trading has been small relative to prewar, these markets also have been subjected to speculative pressures and sudden price impacts. Wheat and corn price movements have been very nervous due to the intense demand. Excessive speculation in rye futures 2 years ago along with price-ceiling difficulties led to the suspension of the Chicago rye futures culty with their hedges, partly because market. Trading has not been resumed.

Egg Market Now Much Larger

The egg futures market on the Chicago Mercantile Exchange is now several times larger than before the war. Egg merchandisers have used the market extensively during the past few years to hedge surplus stocks carried from the flush marketing season into the deficit months, thereby contributing to reduce seasonal price swings.

The potato futures market on the New York Mercantile Exchange is also considerably larger than before the war. But futures trading in butter, a substantial market at Chicago before the war, has been very slow in reviving.

Since the expiration of price controls, price risks in fats and oils have again become an important market factor, as reflected by the increased trading in lard on the Chicago Board of Trade, and in cottonseed oil at New York.

A series of routine preventive measures accounts for the largest part of the regulatory work of the Commodity Exchange Authority in the futures markets—checking from day-to-day the activities of large traders, publishing daily market statistics, auditing the books and records of futures commission firms, and observing floor trading practices on the exchanges.

Postwar Measures

Limits on speculative lines in rye futures were reduced from 2,000,000 bushels to 500,000 bushels in 1945, after a group of speculators were charged with manipulating prices and cornering the market.

Limits on speculative lines of traders in cotton futures were sharply reduced as a result of investigations of the collapse in cotton prices in October 1946.

Current publication of the aggregate speculative and hedging positions of large traders in cotton futures was inaugurated in November 1946. Any newspaper reader may now see the aggregate positions of the few score large traders in cotton futures.

Margin rates on speculative transactions in grains were raised sharply in March 1947 at the Department's request, to head off further boom-and-bust tendencies in the grain markets.

Farm Cooperatives' Interests

Farmers cooperative marketing organizations have a special interest in the operation of the futures markets. Normally, such markets exert a stabilizing influence on the prices of basic agricultural commodities, particularly during periods of heavy marketings. Many large marketing cooperatives hedge cash commodities in the futures markets. Some are concerned by the limited opportunities for hedging on some exchanges at the present time, particularly in grains.

Nearly all of the large-scale grain marketing cooperatives, operating in the principal grain States from Ohio to the Pacific Northwest and from the Dakotas

to Texas, are members of one or more of the leading exchanges.

Large-scale cotton marketing cooperatives are members of the New York or New Orleans exchanges. A special provision of the Commodity Exchange Act guarantees to farmer cooperatives membership rights on the exchanges.

Some exchange-member cooperatives believe that the futures markets, by projecting demand beyond the immediate marketing season, perform an important price-supporting and stabilizing service, particularly in the fall or other marketing season when commodities come on the market in heavy volume. These cooperatives do not want to see the volume of speculative trading unduly restricted. Ordinarily, it is the speculative buyer who carries the risk for the producers' association, merchant and processor in acquiring cash commodities and hedging in the futures market against price declines.

On the other hand, farm leaders generally realize the dangers of attracting large numbers of thinly margined traders into speculative markets. Farm prices may be jeopardized rather than supported by such markets—as happened in cotton last fall, and in wheat this spring. Maintaining adequate volume and proper hedging facilities, and at the same time safeguarding the markets against excessive speculation and manipulation, is a problem farm organizations, as well as the exchanges, will be concerned about in the years ahead.

J. M. MEHL, *Administrator*
Commodity Exchange Authority

Wheat

FARMERS are now beginning to harvest the Nation's first wheat crop of about 1.3 billion bushels, including over 1 billion bushels of winter wheat and the prospects of spring wheat crop of 250 million bushels or more. The 1947 total crop would thus be 10 percent above last year's record.

Barring unfavorable weather, no serious harvesting problems are anticipated. With the largest number of combines in history, farmers will combine four-fifths of the crop, more than ever before.

But grain transportation and storage problems do lie ahead. Fewer boxcars

are available for wheat than last year. And with the expected production, transportation difficulties will not be any less than in 1946. The bigger crop, together with inadequate facilities, add up to a longer period than last year of maximum car-loadings. However, this year's smaller carry-over of old crop wheat may make the storage problem somewhat less severe, at least on and near farms.

The wheat carry-over this July will be very small, probably only 75 million bushels. A 1.3 billion bushel crop this year would provide about 800 million bushels for domestic use in the coming season, and 500 million bushels for export and for addition to the July 1948 carry-over. The carry-over at that time is likely to be larger than now, but exports will probably continue large in the coming season. Exports of wheat (as wheat and flour) for the season ending this June will be about 375 million bushels, only slightly below the record amount shipped in the 1946 year.

The strong demand for both old and new crop wheat will cushion the usual seasonal price drop this summer. The big export demand is expected to keep the price of new wheat above support levels. Before the war, prices usually fell below supports during the summer marketing peak.

Mid-May crop prospects in the other major wheat exporting countries—Canada, Australia, and Argentina—were favorable, especially in Canada. But in other countries, except possibly Russia, production will be below last year's small output. Thus, while there probably will be large amounts of wheat for export in the coming season, world needs of importing countries will be larger and will take all available supplies.

This is further emphasized by the prospects of a continued rice deficit in the Far East, still seriously short of food. Demand for large wheat imports will continue in those countries as well as for all the rice that can be supplied, chiefly from the United States. Although farmers here may come up with another rice crop of record size, the amount available for export will be small compared to the tremendous foreign demand.

Livestock

LARGELY because of the record prices for meat animals during the early months of 1947, the average for the year also will be a record despite the largest civilian meat supplies in 35 years.

However, prices of lambs and cattle are expected to decline at least seasonally through the early fall. On the other hand, prices of hogs are likely to continue close to the high May levels through the summer, but a more than reasonable price drop is in prospect this fall and early winter as the 1947 spring pig crop is marketed.

Beef and veal production will be unusually large this year. Beef production probably will be a record high and veal output a near record. But pork and lamb production will be smaller than in 1946. Thus total meat pro-

duction in 1947 promises to be about the fifth largest in history.

Farm production of meat animals this year probably will be the smallest since 1941, with sheep numbers the lowest in history and cattle numbers still high, but below the 1945 record. Hog production, though well below most of the war years, will be more than in any year before 1941. This adds up to a fairly large meat production in 1948, but probably less than in 1947. The increased hog slaughter in prospect would be more than offset by a smaller beef and veal production.

Dairy Products

DAIRY farmers can look for seasonally higher prices for their milk and butterfat this summer and fall. So far this year decreases from the 1946 peaks have been more than seasonal.

Prices of Farm Products

[Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and State]

Commodity	5-year average		May 15, 1946	Apr. 15, 1947	May 15, 1947	Parity price May 15, 1947
	August 1909-July 1914	January 1935-December 1939				
Wheat (bushel).....dollars..	0.884	0.837	¹ 1.70	2.40	2.39	2.02
Rye (bushel).....do.....	.720	.554	1.92	2.47	2.45	1.65
Rice (bushel).....do.....	.813	.742	² 1.84	2.33	2.33	1.86
Corn (bushel).....do.....	.642	.691	1.35	1.63	1.59	1.47
Oats (bushel).....do.....	.399	.340	.795	.875	.888	.914
Barley (bushel).....do.....	.619	.533	1.22	1.46	1.42	1.42
Sorghum, grain (100-pound).....do.....	1.21	1.17	2.54	2.70	2.72	2.77
Hay (tons).....do.....	11.87	8.87	14.80	17.20	16.80	27.20
Cotton (pound).....cents.....	12.4	10.34	24.09	32.26	33.50	28.40
Cottonseed.....do.....	22.55	27.52	49.00	88.00	83.70	51.60
Soybeans (bushel).....dollars.....	.96	.954	2.16	3.62	3.01	³ 2.20
Peanuts (pound).....cents.....	4.8	3.55	8.90	10.4	10.0	11.0
Flaxseed (bushel).....dollars.....	1.69	1.69	² 2.91	7.34	6.01	3.87
Potatoes (bushel).....do.....	⁴ .607	.717	¹ 1.53	1.47	1.53	1.69
Sweetpotatoes (bushel).....do.....	.878	.807	2.51	2.33	2.33	2.01
Apples (bushel).....do.....	.96	.90	3.84	3.03	3.18	2.20
Oranges on tree (box).....do.....	⁵ 2.29	1.11	3.14	1.68	1.57	3.46
Hogs (hundredweight).....do.....	7.27	8.38	14.80	24.30	22.90	16.60
Beef cattle (hundredweight).....do.....	5.42	6.56	² 13.70	18.30	18.60	12.40
Veal calves (hundredweight).....do.....	6.75	7.80	14.40	19.60	20.10	15.50
Lambs (hundredweight).....do.....	5.88	7.79	14.10	19.60	19.80	13.50
Butterfat (pound).....cents.....	26.3	29.1	⁵ 51.3	68.5	63.1	⁶ 57.0
Milk, wholesale (100 pound).....dollars.....	1.60	1.81	² 3.76	⁴ 4.06	3.84	⁷ 3.29
Chickens (pound).....cents.....	11.4	14.9	25.3	27.7	27.9	26.1
Eggs (dozen).....do.....	21.5	21.7	32.8	40.8	40.7	⁸ 42.3
Wool (pound).....do.....	18.3	23.8	⁹ 42.5	40.2	39.0	41.9

¹ Does not include bonus payment of 30 cents per bu. for wheat delivered under Government purchase program.

² Revised.

³ Comparable base price, August 1909-July 1914.

⁴ Comparable price computed under sec. 3 (b) Price Control Act.

⁵ 1910-23 average of \$1.12 per bu. used in computing parity.

⁶ 1910-23 average for computing parity price.

⁷ Does not include dairy production payments made directly to farmers by county PMA offices October 1943 to June 1946.

⁸ Adjusted for seasonality.

Milk production in the second half of 1947 probably will be less than in the same months of 1946 and total production for 1947 may be slightly under last year's 119.7 billion pounds. In the early months of 1947, the record milk production per cow offset the decline in number of cows on farms. However, the difference in monthly production above the same months last year was becoming progressively smaller each month.

Feed supplies have been plentiful and are likely to be ample during the rest of 1947. However, for several months mill feed and butterfat-feed ratios have been below last year and the long-time average, and will continue so while feed prices are at present levels. Meat prices generally have been high in relation to dairy products and the feed ratios favorable to cattle and hog production.

Chickens and Turkeys

BROILER growers thus far in 1947 have produced about as many broilers as in 1946. The outlook for the remainder of the year depends largely on feed prices. A sharp downturn in feed prices would increase broiler output, but if prices continue at present levels broiler output would drop.

Present indications point to fewer layers on hand next January 1 than on the first of this year, largely because of the 5 percent drop in chickens being raised this year.

With the output of poult during the first 4 months of this year about one-fourth below last year, growers will raise 20 to 25 percent fewer turkeys.

The reduced output does not mean that there will be this much of a drop in turkey supplies particularly for the Thanksgiving and Christmas season. Very large cold storage holdings will help offset the production decline. However, the holdings are being reduced in good volume. Over 100 million pounds of turkey were consumed in the first half of 1947, a new record. Thus turkey prices are not likely to change much from present levels.

Fruit

DESPITE a late spring and some frost damage in eastern fruit areas, prospects continue generally favorable for

this year's crop of apples and other deciduous fruits.

The 1947 strawberry crop is estimated to be nearly a fourth larger than the 1946 crop but still a tenth below average.

The peach crop in the 10 early Southern States is expected to set a new record of more than 25 million bushels this year, the third successive large crop from these States, all well above the 1936-45 average of 16.5 million bushels.

The California sweet cherry crop of 29,000 tons is 15 percent smaller than last year but still 16 percent larger than the 1938-44 average. California's 92,000-ton plum crop is slightly below 1946, although a third above the 1935-44 average.

This is the low year for apricot production in California, where small crops tend to alternate with large ones. The crop of 170,000 tons this year compares with 306,000 tons last year and 159,000 tons in 1945. Stocks of canned and dried apricots this spring are much larger than a year earlier, in part offsetting the prospective smaller packs.

Because of smaller production the 1947 pack of canned deciduous fruits also is expected to be below last year. However, because of large carry-over stocks of some items, total supplies in the 1947-48 season probably will again be generally ample.

Over 800,000 carloads of perishable foods pass through 20 major wholesale fruit, vegetable and poultry markets each year. This volume would fill two freight trains stretching from coast to coast.

The 1945 farm population showed a net increase for the first time since 1932. But the 26 million persons living on farms the first of 1946 was well below the 32 million in 1910.

Peanuts

ANOTHER 2-billion-pound peanut crop is in prospect this year. Such a crop would be the sixth in succession above 2 billion pounds. The 1931-40 average was 1.2 billions.

The sharp increase in production in recent years was brought on by the heavy demand for edible peanuts, and,

to a lesser extent, for oil. The big production boost came from more acreage in the Southeast and Southwest. The Virginia-Carolina acreages did not go up much owing to the high income from competing crops, especially tobacco.

The national yield per acre actually declined during the war because most of the acreage increases were on low-yielding land. The low yields in these newer areas more than offset the higher yields in certain of the older commercial sections where use of improved seed, more adequate fertilizing and more extensive dusting pushed yields up. When and if peanut acreages start going down, the decrease probably will be sharpest in the lower yielding areas of the Southeast and Southwest.

A much larger-than-usual quantity of 1946 crop peanuts was crushed, as the price of peanut oil was high enough to draw many peanuts that ordinarily would have gone into edible uses. However, the fats and oil shortage has eased considerably, and prices of peanut oil have declined sharply in recent weeks.

During the war about 1.3 billion pounds per year of farmers' stock peanuts were used for food compared with 941 million pounds during the year 1940-41. The future edible demand, though a bit less than during the war, is expected to continue well above the prewar. Even if edible uses stay up, substantial supplies would be available for crushing for oil and meal, since only about 300 million pounds are used annually for seed on the farm, and local sales. When the fats and oils supply becomes normal, continued big production of peanuts would present a burdensome marketing problem.

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